**Invasive meningococcal disease in Switzerland, 2004-2006: the decline continues**

Phillip Zucs[1]*, Béatrice Ninet[2]

[1] Swiss Federal Office of Public Health, Berne, Switzerland
[2] National Centre for Meningococci, Geneva, Switzerland
* Corresponding author

**Introduction**
After peaking in 2000 at 2.5 cases/100,000 inhabitants with serogroup C accounting for 61% of cases, the incidence of invasive meningococcal disease (IMD) in Switzerland has been decreasing for several years. In late 2005, Swiss meningococcal immunisation recommendations that had formerly only targeted certain risk groups, were extended to healthy children aged between 1 and 5 years and adolescents aged between 11 and 20 years to provide optional individual protection through complementary (rather than routine) immunisation.

**Aims**
Our aim is to present methods, results and conclusions of Swiss IMD surveillance between 2004 and 2006.

**Methods**
IMD is notifiable to cantonal and federal health authorities. In 70 to 80% of cases, meningococcal strains isolated at peripheral laboratories are sent to the National Centre for Meningococci (NCM) for serotyping, genotyping and antimicrobial resistance testing. In cases of negative cultures, serogrouping by PCR done on blood or cerebrospinal fluid is available. The serogroup distribution determined at the NCM was also assumed for cases where the NCM did not receive any sample.

**Results**
From 2004 to 2006, the annual number of notified IMD cases decreased from 80 (1.1/100000) to 64 (0.9/100 000). Serogroups B and C accounted for 89% of all notified cases. Most of the decline occurred between 2004 and 2005 when the incidence of serogroup B and C disease dropped from 0.7 to 0.6/100,000 and from 0.3 to 0.2/100,000, respectively. The age-groups most affected by IMD were infants, children aged 1 to 4 and adolescents aged 15 to 19 years with mean annual incidence rates of 12.5, 3.6 and 3.3/100,000, respectively. The decrease between 2004 and 2005 is largely attributable to group B disease in infants and group B and C disease in 15 to 19 year olds. Between 2004 and 2006, 12 (5.4%) of 220 notified IMD cases died. Case fatality was slightly higher with group B than with group C disease (5.8 versus 4.4%) and highest among 15 to 19 year olds (10.2%). The most frequently isolated B and C phenotypes were B:15:P1.16 (14.4% of all group B isolates), mostly associated with multilocus sequence type 2816, and C:2a:P1.5 (41.3% of all group C isolates), associated exclusively with sequence type 11. The phenotype most frequently found in previous years, C:2b:P1.2,5 (sequence type 8), has not been isolated in Switzerland since 2005.

**Conclusions**
Switzerland remains a country of very low IMD endemicity. The decline of IMD incidence observed between 2001 and 2004 continues at a slower pace at least until 2006, affects both serogroup B and C disease, seems to be more pronounced in infants and adolescents than in other age-groups and has probably very little to do with immunisation strategy. Case fatality is lower than elsewhere reported, particularly for group C disease. The group C strain that accounted for most of the peak in 2000 has completely disappeared.